

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>N. 94872</b>	<b>FOR FURTHER ACTION</b> <small>see Form PCT/ISA/220 as well as, where applicable, Item 5 below.</small>	
International application No. <b>PCT/IB2005/002607</b>	International filing date (day/month/year) <b>15/08/2005</b>	(Earliest) Priority Date (day/month/year) <b>30/08/2004</b>
Applicant  <b>TOYOTA JIDOSHA KABUSHIKI KAISHA</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐ Certain claims were found unsearchable (See Box II).

3. ☐ Unity of invention is lacking (see Box III).

**4. With regard to the title,**

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

**5. With regard to the abstract,**

☐ the text is approved as submitted by the applicant.

☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

**6. With regard to the drawings,**

a. the figure of the drawings to be published with the abstract is Figure No. 2

☒ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/IB2005/002607

Box No. IV Text of the abstract (Continuation of item 5 of the first sheet)

An ECU executes (300) a program including a step (S202) of opening an electromagnetic ASV (232) while a vacuum pressure ASV (1) and a vacuum pressure ASV (2) are controlled so as to be closed, and an air pump (200) is controlled so as to be stopped in a case where an air amount GA that is an amount of air introduced into an engine (100) is equal to or larger than a predetermined air amount GA (0), and a coolant temperature TW at the starting time of the engine is equal to or higher than a predetermined coolant temperature TW (0) ("YES" in step S200); a step (S204) of detecting a pressure; a step (S206) of closing the electromagnetic ASV; and a step (S402) of determining that failure has occurred in at least one of the vacuum pressure ASV (1) and the vacuum pressure ASV (2), remains in an opened state and cannot be closed when there is a pulsation of the pressure that is detected while the electromagnetic ASV is opened ("YES" in step S400).

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International Application No  
PCT/IB2005/002607

A. CLASSIFICATION OF SUBJECT MATTER  
F01N3/32 F02B77/08

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
F01N F02B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2004/011027 A1 (HIROOKA SHIGEMASA ET AL) 22 January 2004 (2004-01-22) paragraph '0072! - paragraph '0111!; figures 8-13	1,5,11
A		2-4,6-9
Y	PATENT ABSTRACTS OF JAPAN vol. 017, no. 603 (M-1505), 5 November 1993 (1993-11-05) & JP 05 179936 A (TOYOTA MOTOR CORP), 20 July 1993 (1993-07-20) abstract; figures	1,5,11
A	US 2004/107693 A1 (BAYERLE KLAUS ET AL) 10 June 2004 (2004-06-10) the whole document	1
	-/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

## \* Special categories of cited documents :

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*&\* document member of the same patent family

Date of the actual completion of the international search

1 December 2005

Date of mailing of the international search report

08/12/2005

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## INTERNATIONAL SEARCH REPORT

International Application No  
PCT/IB2005/002607

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>PATENT ABSTRACTS OF JAPAN vol. 016, no. 119 (M-1225), 25 March 1992 (1992-03-25) &amp; JP 03 286121 A (MAZDA MOTOR CORP), 17 December 1991 (1991-12-17) abstract; figures</p>	1

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International Application No

PCT/IB2005/002607

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
US 2004011027	A1	22-01-2004	JP	2004011585 A	15-01-2004
JP 05179936	A	20-07-1993	JP	2797802 B2	17-09-1998
US 2004107693	A1	10-06-2004	DE	10249421 A1	13-05-2004
JP 03286121	A	17-12-1991	JP	2903243 B2	07-06-1999